



June 30, 2020
Kleinfelder Project No.: 20180666.071A

Ms. Melinda Greenwood
Community and Economic Development Director
Murray City Public Services
4646 South 500 West
Murray, Utah 84123

**SUBJECT: JUNE 2020 SEMI-ANNUAL BARRIER MONITORING
MURRAY COSTCO WHOLESALE WAREHOUSE #764
5201 SOUTH INTERMOUNTAIN DRIVE
MURRAY, UTAH 84107**

Dear Ms. Greenwood:

This report documents surface barrier monitoring, storm drain inspections and barrier maintenance conducted at the Murray Costco Wholesale Warehouse (Site) referenced above during June 2020. A semi-annual barrier monitoring and storm drain inspection was conducted by Kleinfelder personnel at the Site referenced above on June 18, 2020.

The barriers were inspected according to the Site Barrier Maintenance and Monitoring Plan (BMMP) dated August 8, 2002 and amended June 6, 2016. The inspection included visually examining select stormwater catch basins and ground surface barriers, noting defects (if any), and making recommendations for repairs, if required. Information collected during the inspection was recorded on the Barrier Inspection Checklists and the Storm Drain Inspection Checklist provided in Attachment A. A Site map indicating the stormwater catch basin locations and observations of note are included in Attachment A. In general, typical wear and tear was observed on the Site landscaping and asphalt and concrete barriers, as described in this report. No breaching of the surface barriers or storm drains was observed during the inspection, and the Site surface barriers appear to be managed and maintained in accordance with the BMMP.

LANDSCAPING BARRIERS

During the June inspection the landscaping barriers did not display signs of settlement, soil erosion, soil damage from vehicles, soil depressions or differences in barrier elevations with standing water, channels in the soil, or damaged, missing, or ineffective erosion control systems.

ASPHALTIC CONCRETE BARRIERS

During the June inspection, asphaltic barriers had shallow cracks indicative of normal wear, many of which were sealed with tar. Slight settling was observed in various locations throughout the Site. It should be noted that during the inspections, Kleinfelder did not observe soils breaching the asphalt and concrete surfaces in the observed areas of cracking and settling.

CONCRETE BARRIERS

One small area of concrete damage, approximately 6 inches in diameter, was observed in the northeast portion of the gas station and two small areas of concrete damage, up to 8 inches in diameter, were observed in the curbs next to the stormwater catch basins CB2 and CB3. The concrete damage did not extend to, or expose, the underlying soil. The remainder of the concrete barriers were in good condition, including sidewalks, curbs, and gutters, loading platforms, and parking areas. Large cracks and separations were not identified during our inspections of the sealed joints (present at the fuel center).

WAREHOUSE BUILDING (CONCRETE BARRIER)

Minor concrete damage was observed along the north, west, and south warehouse perimeter walkways. The remainder of the concrete barriers around the exterior of the warehouse building were in good condition, with sealed concrete joints. No significant cracks, holes, settlement areas, or other physical features that would indicate the integrity of the barrier had been compromised were observed during the barrier inspection. No warehouse building concrete maintenance actions are needed at this time.

CATCH BASIN INSPECTION

Select stormwater catch basins (CBs) were inspected to assess whether groundwater was leaking into the storm drain system via breaches in the catch basin walls. Based upon previous Site investigations and storm drain repairs, inspections of CB1 through CB9 were included as part of the Site BMMP. Inspection and reporting requirements are outlined in Addendum 2 to the BMMP, dated June 6, 2016.

The selected stormwater catch basins (CB1 through CB9) were inspected by a Kleinfelder field engineer on June 18, 2020. The storm drain locations are indicated on the inspection figures in Attachment A. Standing water was observed in the nine inspected catch basins at the approximate level of the inlet and outlet piping. Moist sidewalls were observed in some of the catch basins during the June inspection within the upper 8 feet of the vault. The moistness observed on the catch basin walls during the June inspection did not appear to have the potential to impact storm water within the drains. Kleinfelder will continue to monitor the catch basins for seepage in the second 2020 semi-annual inspection. Checklists from the June inspection are included in Attachment A.

POST-SEISMIC EVENT INSPECTION

An earthquake occurred March 18, 2020 near the Site. Costco personnel conducted a site inspection following the earthquake, in accordance with the BMMP. Based on information provided by Costco personnel and reported to Murray City, no barrier damage was observed during the post-earthquake inspection. The results of the post-earthquake inspection were reported to Murray City in March 2020.

SITE BARRIER REPAIR WORK

No repairs were conducted to the storm drains in 2020. Maintenance of the Site pavement appeared to have been performed to repair cracks and potholes prior to our Site visit. Based on Kleinfelder's June observations, the warehouse slab in the new freezer area was replaced.

MONITORING INSPECTION SCHEDULE

Costco's owner representative will conduct barrier inspections on a semi-annual basis to ensure the barriers are maintained in a manner to prevent human exposure to subsurface soils. The next inspection is scheduled for November 2020.

LIMITATIONS

This work was performed in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services are provided. Our conclusions, opinions and recommendations are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no other representation, guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

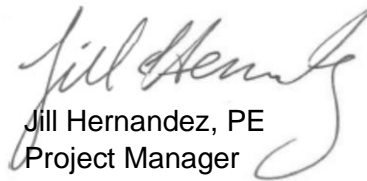
Please contact us at 801.261.3336 if you have any questions or desire additional information.

Respectfully submitted,

KLEINFELDER



Renato Stella
Staff Professional



Jill Hernandez, PE
Project Manager

ATTACHMENTS

Attachment A: June 18, 2020 Inspection Records:
Barrier Inspection Checklists
Barrier Inspection Map
Storm Drain Inspection Checklist

cc: Diane Carter – Costco Real Estate Manager
Chad Efnor – Costco Warehouse #764 General Manager
Chris Quarnberg – Costco Warehouse #764 Administrative Manager
Michael Storck – Utah DERR
Erna Waterman- EPA



KLEINFELDER

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Attachment A

ATTACHMENT A

June 18, 2020
Barrier Inspection Checklists
Barrier Inspection Map
Storm Drain Inspection Checklist

**COSTCO Wholesale Warehouse
Barrier Inspection Checklist**

Date: 6/18/20
Inspector: RENATO STELLA

Barrier Type: INTERIOR LANDSCAPING

Is the barrier in place and properly maintained: Yes ☒ No ☐ Not Applicable ☐

Observations/Comments: THE INTERIOR LANDSCAPING APPEARED TO BE
IN GOOD CONDITION

Barrier Type: PERIMETER LANDSCAPING

Is the barrier in place and properly maintained: Yes ☒ No ☐ Not Applicable ☐

Observations/Comments: THE PERIMETER LANDSCAPING APPEARED TO BE
IN GOOD CONDITION

Barrier Type: CONCRETE SURFACES

Is the barrier in place and properly maintained: Yes ☒ No ☐ Not Applicable ☐

Observations/Comments: THE CONCRETE APPEARED TO BE IN GOOD
CONDITION, WITH MINOR CONCRETE DAMAGE OBSERVED
IN THE TRUCK DECK AREA AND NORTH WEST OF THE
WAREHOUSE.

Barrier Type: ASPHALT PAVEMENT - NORTH LOT

Is the barrier in place and properly maintained: Yes ☒ No ☐ Not Applicable ☐

Observations/Comments: FEW AREAS OF MINOR ASPHALT PAVEMENT
DAMAGES WERE OBSERVED, WITH MINOR CRACKED SEALANT
OBSERVED IN A FEW LOCATIONS. HOWEVER, THE PAVEMENT
WAS GENERALLY OBSERVED TO BE IN GOOD CONDITION.

Barrier Type: ASPHALT PAVEMENT - SOUTH LOT

Is the barrier in place and properly maintained: Yes ☐ No ☐ Not Applicable ☐

Observations/Comments: FEW AREAS OF MINOR ASPHALT PAVEMENT
DAMAGES WERE OBSERVED, WITH MINOR CONCRETE SETTLING,
CRACKED SEALANT PAVEMENT OBSERVED.

Barrier Type: _____

Is the barrier in place and properly maintained: Yes ☐ No ☐ Not Applicable ☐

Observations/Comments: _____

Inspection Results:

**COSTCO Wholesale Warehouse
Annual Barrier Monitoring and Maintenance Plan
Review Checklist**

Instructions: The Barrier Monitoring and Maintenance Plan is to be reviewed on an annual basis to ensure that all sections of the plan are up-to-date and that all barriers are being appropriately maintained and managed. This form is to be completed fully to facilitate the annual review process. A "yes" response to any of the first three review questions will require the Barrier Monitoring and Maintenance Plan to be revised accordingly.

Date: 6/18/20
Reviewer: RONALD STELLA

Have there been changes to the barrier types and/or locations? No

Have there been any changes in the personnel responsible for conducting the inspections of the barriers?

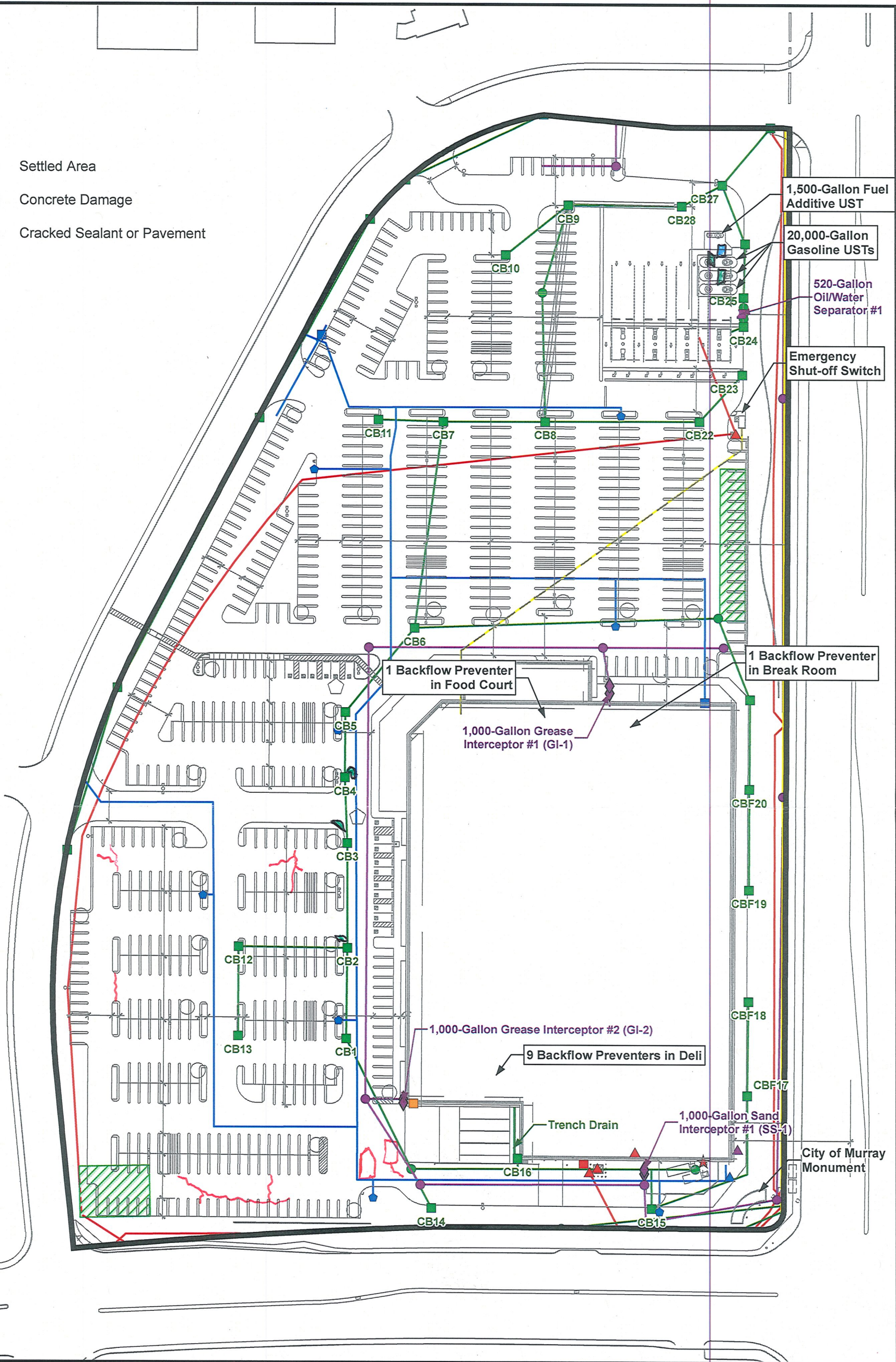
No

Other changes? N/A

Are the barriers being properly maintained? YES

Additional comments not requiring changes in the Barrier Monitoring and Maintenance Plan: N/A

- Settled Area
- Concrete Damage
- Cracked Sealant or Pavement



Explanation

- Approximate Site Boundary
- Telephone
- Electric
- Gas
- Water
- Sewer
- Storm
- Transformer
- Gas Meter
- Post Indicator Valve
- Sewer Manhole
- Snow Storage Area
- Generator
- Fire Hydrant
- Fire Sprinkler Drain
- Storm Manhole
- Electric Meter
- Water Meter
- Oil/Water Separator
- Catch Basin
- Grease/Sand Trap
- CB = Catch Basin
- CBF = Catch Basin with Filter

Basemap: Mulvanny G2, Existing Site Plan, October 2, 2014.
Utilities: City of Murray, Utah

0 50 100 Feet
Locations are Approximate



PROJECT: 20180666.071A
DRAWN: OCT 2019
DRAWN BY: KFH
CHECKED BY: JH
FILE NAME: Figure2.mxd

SITE MAP

COSTCO WAREHOUSE #764
5201 SOUTH INTERMOUNTAIN DRIVE
MURRAY, UTAH

FIGURE

1



Costco Wholesale Warehouse Murray, Utah

Catch Basin Inspection Checklist

DATE: 6/18/20
INSPECTOR: RENATO STELLA

1) Are seeps, cracks, or leaks visible in the Catch Basin?

If yes, describe:

SSDI/CB-1:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI/CB-2:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI/CB-3:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI/CB-4:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI/CB-5:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI/CB-6:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI/CB-7:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI/CB-8:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI/CB-9:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>

2) Is standing water present in the Catch Basin?

If yes, describe:

SSDI/CB-1:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
SSDI/CB-2:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
SSDI/CB-3:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
SSDI/CB-4:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
SSDI/CB-5:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
SSDI/CB-6:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
SSDI/CB-7:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
SSDI/CB-8:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
SSDI/CB-9:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>

STANDING WATER WAS OBSERVED DUE TO
RECENT RAIN EVENT

If Yes:

When was the last storm event?

6/16/20

Have activities been conducted in the drainage area or up slope catch basin areas that may have put water in the system?

Yes ☐ No ☒

Any evidence of irrigation water going into the stormwater system?

Yes ☐ No ☒

3) Is running water present in the Catch Basin?

If yes, describe:

SSDI/CB-1:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI/CB-2:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI/CB-3:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI/CB-4:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI/CB-5:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI/CB-6:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI/CB-7:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI/CB-8:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
SSDI/CB-9:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>

If Yes:

When was the last storm event?

Yes ☐ No ☐

6/16/20

Is running water present in up slope catch basins?

Yes ☐ No ☒

Is running water present in down slope catch basins?

Yes ☐ No ☒

Corrective Action Taken:

None